IN THE CLAIMS

What is claimed is:

1. (Currently Amended) A method of organizing data comprising:

analyzing an interface specification indicative of device specific parameters;

identifying similarities between the device specific parameters corresponding to devices of different vendors;

enumerating a plurality of the device specific parameters in a common object model adapted to normalize distinctions between the device specific parameters, the device specific parameters corresponding to different devices by including normalized parameters for each of the different devices, including defining the enumerated device specific parameters as indicative of a common parameter in the common object model;

receiving a request for device attributes, the device attributes indicative of the device specific parameters corresponding to a plurality of dissimilar devices having different device specific parameters;

computing a response responsive to the request, the computation employing the normalized parameters in the common object model; and

communicating the response by employing the computed normalized parameters, the normalized parameters independent of the device specific parameters.

2. (Currently Amended) The method of claim 1 further comprising

~~analyzing an interface specification indicative of~~ the device specific ~~parameters;~~

~~identifying similarities between the device specific parameters corresponding to devices of different vendors;~~

enumerating the similar device specific parameters corresponding to other device specific parameters~~; and~~

~~defining the enumerated device specific parameters as indicative of a common parameter in the common object model~~.

3. (Original) The method of claim 2 further comprising:

translating device specific parameters to corresponding parameters in the common object model, the translating further including

matching at least one device specific parameter to a common object model parameter; and

computing an equivalent value for the common object model parameter, the common object model parameter applicable to device specific parameters of other devices.

4. (Original) The method of claim 1 further comprising computing the query response employing the included device specific parameters.

5. (Original) The method of claim 1 wherein the devices are storage arrays corresponding to a plurality of vendors, each of the vendors having an independent device interface specification.

6. (Original) The method of claim 5 wherein the devices corresponding to a plurality of different interface specifications.

7. (Original) The method of claim 1 where the devices including a varying arrangement of subdevices, each of the subdevices having device specific parameters.

8. (Original) The method of claim 7 wherein the device specific parameters include back end parameters, the back end parameters indicative of specific subdevices within the device.

9. (Original) The method of claim 7 wherein the subdevices are disk drives each having independent storage device attributes, each of the storage device attributes corresponding to attributes of the object model.

10. (Original) The method of claim 1 wherein computing the query response further comprises interrogating device specific agents corresponding to the type of the device.

11. (Currently Amended) A method of monitoring a managed information environment comprising:

analyzing interface specifications for a plurality of devices, the devices including a varying arrangement of subdevices, each of the devices and subdevices having device specific parameters, the interface specification indicative of the device specific parameters, the device specific parameters including back end parameters, the back end parameters indicative of specific subdevices within the device;

identifying commonalities and distinctions between each of the analyzed interface specifications;

normalizing device specific parameters into a common object model, the common object model operable to store the device specific parameters for each of the plurality of devices without enumerating the identified distinctions;

receiving a query from a user, the query requesting a response including device specific parameters;

retrieving, from the common object model, the normalized device specific parameters corresponding to devices implicated by the query;

computing the query response employing the included device specific parameters;

displaying, to the user, the computed query response, the computed query response indicative of the device specific parameters and indifferent to the identified commonalities and distinctions.

12. (Original) The method of claim 11 wherein the devices implicated by the query include a plurality of disk drive devices, the disk drive devices further comprising a group indicative of protection mechanisms applicable to the group, and wherein the normalized device specific parameters are operable to indicate parameters applicable to the group.

13. (Original) The method of claim 11 wherein the parameters applicable to the group further include parameters selected from the group consisting of usable capacity, raw capacity, system capacity and allocated capacity.

14. (Currently Amended) A data management device operable to organize data according to a common object model comprising:

a management application operable to enumerate a plurality of device specific parameters in a common object model adapted to normalize distinctions between the device specific parameters, the device specific parameters corresponding to different devices by including normalized parameters for each of the different devices;

a server operable to receive a user request for a device query, the device query indicative of the device specific parameters corresponding to a plurality of dissimilar devices having different device specific parameters;

a processor in the server operable to execute the management application to compute a query response responsive to the user request, the computation employing the normalized parameters in the common object model, the management application further operable to compute the query response by interrogating device specific agents corresponding to the type of the device;~~,~~ and

an interface to a console operable to display the query response to the user by employing the computed normalized parameters, the normalized parameters independent of the device specific parameters.

15. (Original) The data management device of claim 14 wherein the management application is further operable to:

receive an analysis of an interface specification indicative of the device specific parameters, the analysis operable to identify similarities between the device specific parameters corresponding to devices of different vendors;

enumerate the similar device specific parameters corresponding to other device specific parameters; and

define the enumerated device specific parameters as indicative of a common parameter in the common object model.

16. (Original) The data management device of claim 15 wherein the management application is further operable to

translate device specific parameters to corresponding parameters in the common object model, the translating further including:

matching at least one device specific parameter to a common object model parameter; and

computing an equivalent value for the common object model parameter, the common object model parameter applicable to device specific parameters of other devices.

17. (Original) The data management device of claim 14 wherein the management application is further operable to computing the query response employing the included device specific parameters.

18. (Original) The data management device of claim 14 wherein the devices are storage arrays corresponding to a plurality of vendors, each of the vendors having an independent device interface specification.

19. (Original) The data management device of claim 18 wherein the devices correspond to a plurality of different interface specifications.

20. (Original) The data management device of claim 14 where the devices including a varying arrangement of subdevices, each of the subdevices having device specific parameters.

21. (Original) The data management device of claim 20 wherein the device specific parameters include back end parameters, the back end parameters indicative of specific subdevices within the device.

22. (Original) The data management device of claim 20 wherein the subdevices are disk drives each having independent storage device attributes, each of the storage device attributes corresponding to attributes of the object model.

23. (Canceled)

24. (Currently Amended) A method of organizing data comprising:

enumerating a plurality of device specific parameters in a common object model adapted to normalize distinctions between the device specific parameters, the device specific parameters corresponding to different devices by including normalized parameters for each of the different devices, enumeration of device specific parameters further comprising identifying interrelationships between the devices;

receiving a user request for a device query, the device query indicative of the device specific parameters corresponding to a plurality of dissimilar devices having different device specific parameters;

computing a query response responsive to the user request, the computation employing the normalized parameters in the common object model, the computation of the query response retrieving the interrelations between the device, the normalized parameters further comprising the interrelationships between the devices, the normalized parameters indicative of other devices coupled to the device; and

displaying the query response to the user by employing the computed normalized parameters, the normalized parameters independent of the device specific parameters.

Claims 25-26. (Canceled)

27. (Currently Amended) The method of claim 2426 wherein the coupling between devices includes organization selected from the group consisting of device groupings, host directors, host interfaces, clusters, redundancy, RAID, failover, and shadowing.

28. (Currently Amended) A computer program product having a computer readable medium operable to store computer program logic embodied in computer program code encoded thereon for organizing data via a common object model comprising:
computer program code for enumerating a plurality of device specific parameters in a common object model adapted to normalize distinctions between the device specific parameters, the device specific parameters corresponding to different devices by including normalized parameters for each of the different devices, the devices including a varying arrangement of subdevices, each of the subdevices having device specific parameters, the device specific parameters including back end parameters, the back end parameters indicative of specific subdevices within the device, wherein the subdevices are disk drives each having independent storage device attributes, each of the storage device attributes corresponding to attributes of the object model;

computer program code for receiving a user request for a device query, the device query indicative of the device specific parameters corresponding to a plurality of dissimilar devices having different device specific parameters;

computer program code for computing a query response responsive to the user request, the computation employing the normalized parameters in the common object model, computing the query response including interrogating device specific agents corresponding to the type of the device; and

computer program code for displaying the query response to the user by employing the computed normalized parameters, the normalized parameters independent of the device specific parameters.

29. (Currently Amended) A set of processor based instructions and a processor responsive to the instructions, the instructions including ~~computer data signal having~~ program code for organizing data via a common object model comprising:

analyzing an interface specification indicative of device specific parameters;

identifying similarities between the device specific parameters corresponding to devices of different vendors;

program code for enumerating a plurality of the device specific parameters in a common object model adapted to normalize distinctions between the device specific parameters, the device specific parameters corresponding to different devices by including normalized parameters for each of the different devices, including defining the enumerated device specific parameters as indicative of a common parameter in the common object model, the devices including a varying arrangement of subdevices, each of the subdevices having device specific parameters, the device specific parameters including back end parameters, the back end parameters indicative of specific subdevices within the device, wherein the subdevices are disk drives each having independent storage device attributes, each of the storage device attributes corresponding to attributes of the object model;

program code for receiving a user request for a device query, the device query indicative of the device specific parameters corresponding to a plurality of dissimilar devices having different device specific parameters;

program code for computing a query response responsive to the user request, the computation employing the normalized parameters in the common object model, computing the query response including interrogating device specific agents corresponding to the type of the device; and

program code for displaying the query response to the user by employing the computed normalized parameters, the normalized parameters independent of the device specific parameters.

30. (Currently Amended) A data management device having a set of processor based instructions and a processor responsive to the instructions operable to organize data according to a common object model, the instructions comprising:

means for enumerating a plurality of device specific parameters in a common object model adapted to normalize distinctions between the device specific parameters,

the device specific parameters corresponding to different devices by including normalized parameters for each of the different devices, the devices including a varying arrangement of subdevices, each of the subdevices having device specific parameters, the device specific parameters including back end parameters, the back end parameters indicative of specific subdevices within the device, wherein the subdevices are disk drives each having independent storage device attributes, each of the storage device attributes corresponding to attributes of the object model, the means for enumerating further comprising:

meanas for normalizing, including at least one of identifying, in the object model, a common parameter or defining a device specific parameter as an attribute in the object model , the normalized parameters codified for accessing the back end of the storage array device;

means for receiving a user request for a device query, the device query indicative of the device specific parameters corresponding to a plurality of dissimilar devices having different device specific parameters;

means for computing a query response responsive to the user request, the computation employing the normalized parameters in the common object model, computing the query response including interrogating device specific agents corresponding to the type of the device; and

means for displaying the query response to the user by employing the computed normalized parameters, the normalized parameters independent of the device specific parameters.